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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,970	01/18/2002	Bruce A. Gnade	4380.000300/KDG	1567

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EXAMINER

MAYEKAR, KISHOR

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/051,970
Filing Date: January 18, 2002
Appellant(s): GNADE ET AL.

MAILED
JUL 25 2005
GROUP 1700

Mark W. Sincell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 11, 2005.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

The amendment after final rejection filed on January 24, 2005 has been entered.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 11-60 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

Chalamala et al. "Effect of O₂ on the Electronic Emission Characteristics of Active Molybdenum Field Emission Cathode Arrays", J. Vac. Sci. Tech. B, vol. 16, pp. 2859-2865, 1998.

Chalamala et al. "Interaction of H₂O with Active Spindt-Type Molybdenum Field Emitter Arrays", J. Vac. Sci. Tech. B, vol. 17, pp. 303-305, 1999.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

- Claims 11, 14, 16, 19, 21, 24, 26, 29, 41, 44, 46 and 49 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by CHALAMALA et al. ("Interaction of H₂O with Active Spindt-Type molybdenum field Emitter arrays", J. Vac. Sci. Technol. B vol. 17:303-305, 1999), hereinafter referred as the first Chalamala publication. The first Chalamala publication discloses that electron emission from molybdenum field emission array is known to be sensitive to the contamination of the emission surfaces by residual gases present in the vacuum envelope (abstract and second paragraph of left column in page 303), wherein the residual gases in the field emitter array include O₂, H₂O, CO₂, N₂, H₂ and

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hydrocarbons like CH_4 (paragraph crossing left and right columns in page 303), and the dissociation and ionization of the residual gases by their interaction with a high electric field and electron flux (the following paragraph). The first publication discloses, in paragraph crossing left and right columns of page 304 and the following paragraph in page 304, a study comprising the steps of operating a field emitter array with voltage of 60 V to generate the high electric field and electron flux, exposing the field emitter array to only H_2O residual gas, and ionizing the exposed gas. Since CH_4 is one of the residual gases and considered as a chemical toxin by the examiner, a similarity exists when exposing the field emitter to residual gas CH_4 as that to H_2O . As such claims 21, 24, 26, 29, 41, 44, 46 and 49 are anticipated by the first publication's teachings.

As to the recited step of reacting as claimed in claims 11 and 16, since the ionizing residual gas CH_4 as the radical species is being generated and since the study discloses in the last 2 paragraphs of right column in page 303 the interaction of the radical species with molybdenum tip surfaces of the field emitter array to cause the contamination thereof wherein the heavy metal molybdenum or the contaminant on the tip surfaces is considered by the examiner as a chemical toxin.

As such, the first Chalamala publication contemplates the reacting of the radical species with a chemical toxin.

- Claims 11, 14-16, 19-21, 24, 26, 29, 41, 44, 46 and 49 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by CHALAMALA et al. ("Effect of O₂ on the Electron Emission Characteristics of Active Molybdenum Field Emission Cathode Arrays", J. Vac. Sci. Technol.B vol. 16 :2859-2865, 1998), hereinafter referred as the second Chalamala publication. See the abstract, Introduction, Discussion and Conclusion in the second publication and for the same reasoning applied to the first publication towards CH₄ and molybdenum as the chemical toxins.

- Claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 27, 28, 30-40, 42, 43, 45, 47, 48 and 51-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over either the first or second publication in view of Applicant's admission. The difference between either the first or second publication is the process parameter and cathode-to-gate distance. However, Applicant admits in page 7 of the specification that recent advances in field emission arrays make it possible to operate the arrays within the above limitations. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the

invention was made to have modified either of the references' teachings as admitted by applicant because the selection of any of known equivalent field emitter arrays with the recited limitations would have been within the level of ordinary skill in the art.

(11) Response to Argument

In response to Appellant's argument that the first and second publications are completely silent with regard to chemical toxins and/or biological toxins, the examiner finds this is to be unpersuasive. As chemical toxins disclose in the specification in lines 15-20 of page 2 are from chemical plants that produce ammonia, chlorine, insecticides, and the like, where there are large volume of highly toxic materials, and from manufacturing facilities that typically use arsine, germane, diborane, and the like, where there are large volumes of highly toxic materials in place. As hydrocarbons like CH_4 and heavy metal molybdenum or its oxide are used or produced in the chemical plants and/or manufacturing facilities, they are fit to the above disclosure as chemical toxins. Below is an excerpt from the following website on methane and molybdenum.

www.setonresourcecenter.com/safety/hazcom/glossary_of_chemicals.htm

Methane - A colorless, odorless, tasteless gas. Used as a fuel and for the production of methanol, acetylene, chloroform, methylene chloride and methyl chloride. Hazard: Simple asphyxiant, severe fire and explosion hazard.

Molybdenum - A gray metal or black powder. Used as an alloying agent in steels and cast iron, pigments for printing inks, paints, and ceramics and hair dye. Essential for life. Hazard: Flammable in form of dust or powder. Acute exposures may include severe gastrointestinal irritation with diarrhea, coma, and death from heart failure.

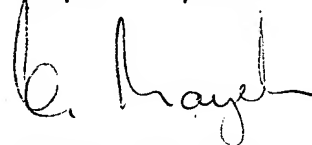
As to the argument that the Chalamela publications are completely silent with regard to any application of field emitter arrays to the detection, mitigation, and/or remediation of chemical toxins and/or biological toxins, the limitations on which the Appellant relies is not stated in the claims. Therefore, it is irrelevant whether the reference includes this feature or not.

As to the argument to the rejection of claims under 35 USC 103(a), since the Chalamela publications disclose the recited step of reacting with, ionizing or dissociating a chemical toxin, the rejection is maintained.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Kishor Mayekar
Primary Examiner
Art Unit 1753

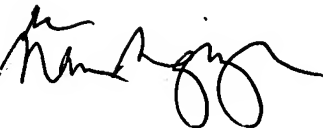
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July 20, 2005

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